

**Written Statement by
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Introduction

Thank you Chairman Dodd, Ranking Member Shelby and distinguished members of the Committee for inviting me to testify before your committee today. I appreciate the opportunity to discuss proposals to improve our nation's infrastructure investment and finance system.

Infrastructure is an essential part of the U.S. economy. Publicly-owned transportation infrastructure -- including the roads, rail lines and airports that businesses use to transport and deliver goods, and that people use to commute to work, visit their families and travel the country -- makes up nearly 13 percent of our total nonresidential capital stock according to the Bureau of Economic Analysis. In addition, spending on public infrastructure is a significant part of government activity. According to the Congressional Budget Office, public investment in transportation infrastructure in 2006 was approximately \$140 billion (6.4 percent of total government spending), which was split roughly equally between the federal government and state and local governments.

The President has announced a bold plan to renew and expand America's transportation infrastructure through an up-front investment connected to a six-year reauthorization of the surface transportation program. Under Secretary Kienitz is providing an overview of that plan.

In my testimony, I will discuss several aspects of the President's infrastructure proposals. First, I will evaluate why, from an economist's perspective, focusing on infrastructure investment makes sense, especially in the current economic environment. Second, I will discuss some of the long-term benefits from increasing our investment in infrastructure. I will then turn to the core ideas behind the Administration's proposed National Infrastructure Bank, which were heavily influenced by the bipartisan work of Chairman Dodd and a distinguished former member of this Committee, Senator Hagel. Finally, I will highlight an innovative financing program, Build America Bonds, which has provided an efficient new way to provide federal support for financing state and local government infrastructure investments and could be a useful tool for the National Infrastructure Bank.

Infrastructure Investment in the Short-Term

The recent recession that started in late 2007 had an exceptionally large impact on the labor market. The U.S. lost over 8 million jobs between December 2007 and December 2009, and the unemployment rate currently stands at 9.6 percent. One in five jobs that were lost in the two year period beginning in December 2007 was in the construction sector. While there are positive signs of recovery in many sectors of the economy, additional steps are needed to ensure that the recovery stays on track. In this economic environment, accelerating infrastructure investment—building on what we have already accomplished in the American Recovery and Reinvestment Act—makes good economic sense for several reasons.

First, infrastructure investment will provide opportunities for workers who have been disproportionately affected by this recession. Due to the collapse of the real estate market, the contraction of employment in the construction industry has been especially acute. Since December 2007, the construction industry has lost 25 percent of its total payroll jobs. In August 2010, the unemployment rate for construction workers stood at 17 percent. This is over three times higher than it was three years ago. We should move quickly to provide an opportunity for construction workers to productively apply their skills and experience. Investment in infrastructure is well targeted to that goal, and will take advantage of underutilized resources in the construction sector.

Second, a wide range of analysts, including economists at the Congressional Budget Office, have found that additional spending on infrastructure is among the most effective policy options for raising output and employment.¹ Investment in infrastructure directly increases employment because workers are hired to undertake construction projects. Additionally, it adds to demand for goods and services through purchases of material and equipment and through additional spending by the workers who are hired. This in turn further increases employment and output throughout the economy.

In addition, during recessions it is common for state and local governments to cut back on capital projects, such as building schools, roads and parks, in order to meet balanced budget requirements. Past research has found that expenditures on capital projects are more than four times as sensitive to year-to-year fluctuations in state income than is state spending in general.²

¹ Congressional Budget Office, “Policies for Increasing Economic Growth and Employment in the Short Term,” January 2010.

² See James R. Hines, Hilary Hoynes, and Alan Krueger, “Another Look at Whether a Rising Tide Lifts All Boats,” in *The Roaring ‘90s: Can Full Employment Be Sustained?*, edited by Alan B. Krueger and Robert Solow, Russell Sage and Century Fund, 2001.

Tax receipts at the state and local level contracted for four straight quarters at the beginning of this recession and are still below pre-recession levels. The American Recovery and Reinvestment Act provided crucial support for infrastructure during the recession. However, we must do more to ensure that investment in infrastructure is not reduced for the wrong reasons, as the need for improved and expanded infrastructure is just as great during a downturn as it is during a boom.

Finally, we have long been under-investing in the nation's infrastructure—and, as I will explain in the next section of my testimony, addressing this shortfall with investments we make today could help spark growth not only now but also in the long-term. The American Society of Civil Engineers (ASCE) estimates that we face a \$2.2 trillion need for infrastructure investment over the next five years. We would need to roughly double our current level of investment in order to reach the levels they recommend. While that analysis might not be an authoritative guide for the most efficient investment of public resources, it strongly suggests that additional funding can be put to good use. Given the stark difference between their assessment of the need for investment and what we are doing, it is not surprising that these engineers have given us a “D” for our current efforts. It doesn't take a professor to know that this grade is unacceptable.

Infrastructure Investment in the Long-Term

As I just mentioned, investing in infrastructure is not only important to our economy now; it also is crucial to the economy's long-term health. Investment in infrastructure can have a sustained impact on aggregate output by improving economic efficiency and productivity. There have been several major infrastructure investments throughout American history that have allowed goods to be transported more quickly and at lower costs, resulting in both lower prices for consumers and increased profitability for firms. Examples include the building of the national railroad system in the 19th century and the creation of the Eisenhower Interstate System in the 1950s and 1960s.

While economists have debated the magnitude of the productivity gains from various infrastructure investments,^{3,4} evidence from recent research clearly points to a positive and significant effect of transportation infrastructure investment on productivity. In a 1999 paper published in the *American Economic Review*, John Fernald finds that the large infrastructure investments made during the construction of the interstate highway system in the 1960s corresponded with a significant increase in the productivity of vehicle-intensive industries (such as transportation and gas utilities), relative to industries that do not depend heavily on vehicles

³ Munnell, Alicia, “Policy Watch: Infrastructure Investment and Economic Growth,” *Journal of Economic Perspectives*, Vol. 6, No. 4, (Fall 1992), pp. 189-198

⁴ Gramlich, Edward, “Infrastructure Investment: A Review Essay,” *Journal of Economic Literature*, Vol. 32, No. 3 (Sept., 1994), pp. 1176-1196

(such as apparel & textiles and plastics).⁵ Fernald's findings suggest that, in the past, investment in infrastructure led to substantial productivity gains, and they point to the potential for further increases in productivity through additional, well-targeted investment.

In addition to improving productivity, infrastructure is a public good that provides lasting benefits to consumers and households. Evidence from economics research, including preliminary evidence from a randomized experiment involving road paving in Mexico, suggests that infrastructure investment can raise housing values, which reflects an improvement in living standards.^{6,7}

Of course, policy should adjust to take advantage of new investment opportunities made available by technological progress and we must be mindful of the fact that at some point, the economy reaches the point of diminishing returns from further investments in a particular area. As Fernald observed, "Building an interstate network might be very productive; building a second network may not."

The Case for a National Infrastructure Bank

A well designed National Infrastructure Bank could help achieve three major policy objectives. It could:

- increase overall investment in infrastructure, and, specifically, attract private capital to co-invest in specific infrastructure projects;
- improve the efficacy of our infrastructure investment by having a merit-based selection process for projects; and
- fill in the gaps in our infrastructure funding system, which currently disadvantages investments in multi-modal and multi-jurisdictional infrastructure projects.

As I indicated earlier, there is a large gap between our current level of investment in infrastructure and the level that outside experts assess is needed to maintain our transportation infrastructure. We are also investing less than other countries as a percentage of GDP. Last week, President Obama noted that our total infrastructure investment as a share of GDP is much less than infrastructure investment in Europe and China. While we are investing 2 percent of our GDP, Europe is investing roughly 5 percent and China is investing 9 percent.

⁵ Fernald, John G., "Roads to Prosperity? Assessing the Link Between Public Capital and Productivity," *The American Economic Review*, Vol. 89, No. 3 (Jun., 1999), pp. 619-638

⁶ Haughwout, Andrew F., "Public Infrastructure Investments, Productivity, and Welfare in Fixed Geographic Areas," *Journal of Public Economics*, Vol. 83, No. 3, (Mar., 2002), pp 405 - 428

⁷ Quintana-Domeque, Climent and Marco Gonzalez-Navarro, "Street Pavement: Results from an Infrastructure Experiment in Mexico," Industrial Relations Section, Princeton University, Working Paper No. 556, (Jul., 2010)

One way to address the need for more infrastructure investment is to attract more private capital for direct investment in transportation infrastructure. There is currently very little direct private investment in our nation's highway and transit systems. The lack of private investment in infrastructure is in large part due to the current method of funding infrastructure, which lacks effective mechanisms to attract and repay direct private investment in specific infrastructure projects. It also results because the private benefit for investors is less than the benefit for society as a whole, because of externalities from infrastructure. The National Infrastructure Bank could address these problems by directly funding selected projects through a variety of means. The establishment of a National Infrastructure Bank would create the conditions for greater private sector co-investment in infrastructure projects.

Secondly, with a few notable exceptions, federal funding for infrastructure investments is not distributed on the basis of a competition between projects on the basis of rigorous economic analysis or any cost-benefit comparisons. The current system virtually ensures that the distribution of investment in infrastructure is suboptimal from the standpoint of raising the productive capacity of the economy.

To address the lack of merit-based funding, the National Infrastructure Bank would develop a framework to analytically examine potential infrastructure projects based on cost-benefit analysis, and evaluate the distributional impact of both the costs and benefits of each project. Of course, not all of the costs and benefits can be quantified, but an effort should be made to quantify what can be quantified and to take account of any additional benefits and costs to society. A rigorous analytic process would result in support for projects that yield the greatest returns to society, and would avoid investing taxpayer dollars in projects where total costs exceed total societal benefits. The National Infrastructure Bank would select projects along a sliding scale of support that most effectively utilizes the bank's limited resources, targeting the most effective and efficient investments.

I should clearly acknowledge that creating a framework for project selection based on cost-benefit analyses of competing infrastructure projects is challenging. For example, consider the well publicized cost of congestion. The Texas Transportation Institute recently estimated that in 2007 some 4.2 billion hours were spent sitting in traffic in 439 urban areas, which they calculate is equivalent to nearly one full work week for the typical American. Valuing the time lost due to being stuck in traffic may appear simple at first, if you only think about the cost of that time as equal to the lost income (i.e., valued at the marginal wage rate). However, not everyone can find a job or wants one, so it is not clear that time spent in congestion should be valued at the wage rate. The Department of Transportation, in its guidance on this matter, recommends a variety of values of time, depending on whether the travel takes place as part of paid business travel, local commuting travel, or long-distance leisure travel. The value of time in freight transportation is

even more complex, varying with the value and “perishability” of the cargo that is being transported. Additionally, there are costs of commuting beyond lost time. A recent survey by Gallup, for example, found that those with long commutes are more likely to experience back and neck pain. All of these potential costs of congestion – and corresponding benefits of alleviating congestion – should be factored into any cost-benefit analysis of infrastructure alternatives.

Finally, in addition to the lack of merit-based funding within one mode of transportation, coordinating multi-modal projects in the current system is extremely difficult because each mode of transportation has distinct funding sources. Each of these funding sources has different requirements, federal and state matching limits, and other restrictions. Complicating matters further, if a multi-modal project crosses state lines, there could be significant difficulty accessing the capital markets for local funding given the difficulty inherent in multi-state debt issuances. Because of the current criteria underlying infrastructure investments, we have lost sight of the larger rationale for national infrastructure investment.

As a result, there has been an under-investment in multi-modal and multi-jurisdictional infrastructure projects, compared with single modes and single jurisdictional projects. A National Infrastructure Bank would be tasked with assisting projects that are multi-modal and/or cross jurisdictional boundaries.

A corollary to this point is the potential value that can be generated from so-called network effects. Network effects suggest that investments in certain areas, such as infrastructure, can lead to increasing returns based on the size and interconnectivity of the broader network. A classic example is telephones: if only one person has a telephone, the value is much less than half as great than if two people have telephones. This is particularly important when one considers the new types of investments that can be financed by the National Infrastructure Bank. Multi-modal, multi-jurisdictional investments will improve the connections between our existing infrastructure networks, such as better links between our ports and our freight rail lines, or connecting our airports and inter-city passenger rail lines to individual cities’ public transit systems.

As infrastructure investments often have broad benefits for society as a whole, it is incorrect to simply assign the benefits of a project directly to the area where the infrastructure is built. For example, a project that improves the connectivity between a freight rail line and a port to allow for quicker, cheaper and more reliable service will be a benefit for the producers of goods, who will use the rail line to send their goods to the port for export. Those producers may be thousands of miles from the actual infrastructure investment, but they will enjoy a portion of its benefits.

Innovative Financing

In addition to improving the targeting of our infrastructure investment, we need to consider new ways to finance it. A National Infrastructure Bank should be at the forefront of innovative and sound ways for financing worthy infrastructure projects. According to the Congressional Budget Office, there is little direct private investment in our nation's surface transportation infrastructure system, and this is a challenge that the National Infrastructure Bank would be able to address.⁸ However, state and local governments often turn to the private capital markets to finance infrastructure investment through the municipal bond market, a long standing practice which the federal government subsidizes by allowing tax-exempt bond status.

I'd like to highlight an innovative financing tool that was introduced in the Recovery Act and has helped hundreds of states and local governments fund infrastructure projects thus far – Build America Bonds, or BABs. BABs are an alternative for issuers who traditionally have issued tax exempt bonds, such as state and local governments. A Build America Bond is a taxable bond for which Treasury pays a 35 percent direct subsidy to the issuer in lieu of the traditional extension of tax exempt status. (Other Recovery Act bonds, which utilize the BABs model, have an even deeper subsidy, such as Recovery Zone Facility Bonds.) BABs have enjoyed a very positive reception from both issuers and investors. Between the program's launch on April 3, 2009 and August 31, 2010, over \$126 billion of BABs have been issued by state and local governments in 49 states and the District of Columbia. Last spring, the Department of the Treasury estimated that for the \$90 billion of Build America Bonds issued through March 31, 2010, state and local governments will save over \$12 billion in present value borrowing costs compared with issuing traditional tax-exempt bonds. This figure has grown since then.

Given the success of the program, the Administration has proposed to extend the BABs program at a subsidy rate of 28 percent, which we estimate would be revenue-neutral for the federal government. In addition, the Administration has proposed to expand the eligible uses of BABs, allowing them to support financing for nonprofits and a wider range of municipal borrowing. This is an example of both building off the successes of the Recovery Act as well as creating innovative financing tools for infrastructure investment. We look forward to working with Congress to extend this innovative program. Indeed, the value of extending BABs would be even greater if a National Infrastructure Bank were in existence to spur public-private investments in infrastructure projects.

⁸ Kile, Joseph, "Issues in Infrastructure Investment," National Tax Association Conference. Congressional Budget Office, Philadelphia, 26 Sep 2008. Address.

Conclusion

To summarize, a strong economic case can be made to increase our infrastructure investments and to accelerate those investments to put people back to work, to partner more with the private sector in funding infrastructure projects, and to take benefits and costs into account in allocating infrastructure investments. The creation of a National Infrastructure Bank would be a major step toward achieving these goals.

Mr. Chairman, this concludes my prepared testimony. I thank you for your leadership on these issues. I will be pleased to answer any questions you or other members of the Committee may have.